

What is claimed is:

1. A substantially purified human pyrophosphatase (HPYP) comprising the amino acid sequence of SEQ ID NO:1 or fragments thereof.

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2. An isolated and purified polynucleotide sequence encoding HPYP of claim 1.

3. A polynucleotide sequence which hybridizes under stringent conditions to the polynucleotide sequence of claim 2.

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4. A hybridization probe comprising the polynucleotide sequence of claim 2.

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5. An isolated and purified polynucleotide sequence comprising SEQ ID NO:2 or variants thereof.

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6. A polynucleotide sequence which is complementary to SEQ ID NO:2 or variants thereof.

7. A hybridization probe comprising the polynucleotide sequence of claim 6.

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8. An expression vector containing the polynucleotide sequence of claim 2.

9. A host cell containing the vector of claim 8.

25 10. A method for producing a polypeptide comprising the amino acid sequence of SEQ ID NO:1 the method comprising the steps of:

a) culturing the host cell of claim 9 under conditions suitable for the expression of the polypeptide; and

b) recovering the polypeptide from the host cell culture.

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11. A purified antibody which binds specifically to the polypeptide of claim 1.

12. A purified agonist which specifically binds to and modulates the activity of the
5 polypeptide of claim 1.

13. A purified antagonist which specifically binds to and modulates the activity of the
polypeptide of claim 1.

10 14. A pharmaceutical composition comprising the purified antagonist of claim 13 in
conjunction with a suitable pharmaceutical carrier.

15. A method for treating inflammatory disease comprising administering to a subject in
need of such treatment an effective amount of the pharmaceutical composition of claim 14.

16. A method for treating cancer comprising administering to a subject in need of such
treatment an effective amount of the pharmaceutical composition of claim 14.

17. A method for detection of polynucleotides encoding HPYP of claim 1 in a biological
20 sample comprising the steps of:

a) hybridizing a polynucleotide consisting of SEQ ID NO:2 to nucleic acid material
of a biological sample, thereby forming a hybridization complex; and

b) detecting said hybridization complex, wherein the presence of said complex
correlates with the presence of a polynucleotide encoding HPYP in said biological sample.

25 18. The method of claim 17 wherein before hybridization, the nucleic acid material of
the biological sample is amplified by the polymerase chain reaction.

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